



GSA Federal Acquisition Training Symposium

April 25 – 26, 2017
Huntsville, AL

Learn > Discuss > Connect

Interact

Contract Types

John Cannaday
Professor, Contract Management
Defense Acquisition University - South

April 26, 2017

Outline

- **Contract Type Overview**
- **Incentive Contracts**
- **Multiple Incentives**
- **Q&A**

Quotes

“Contract law is essentially a defensive scorched-earth battleground where the constant question is, “if my business partner was possessed by a brain-eating monster from beyond spacetime tomorrow, what is the worst thing they could do to me?”

— Charles Stross

“It is a very sobering feeling to be up in space and realize that one's safety factor was determined by the lowest bidder on a government contract.”

— Alan Shepherd

A contract is an ask game, and if it asks for an hour, and I submit to an hour, then it's an hour. When I look at a contract, I look at the obligation - where, when, how long, the compensation. If I agree to it, that's the way it is. I have an obligation. They have an obligation.

— Chuck Berry

Contract Type Policy

- The objective is to negotiate a contract type and price (or estimated cost and fee) that will result in a reasonable contractor risk and provide the contractor with the greatest incentive for efficient and economical performance.
- Selecting the contract type is generally a matter for negotiation and requires the exercise of sound judgment.

FAR 16.103(a)

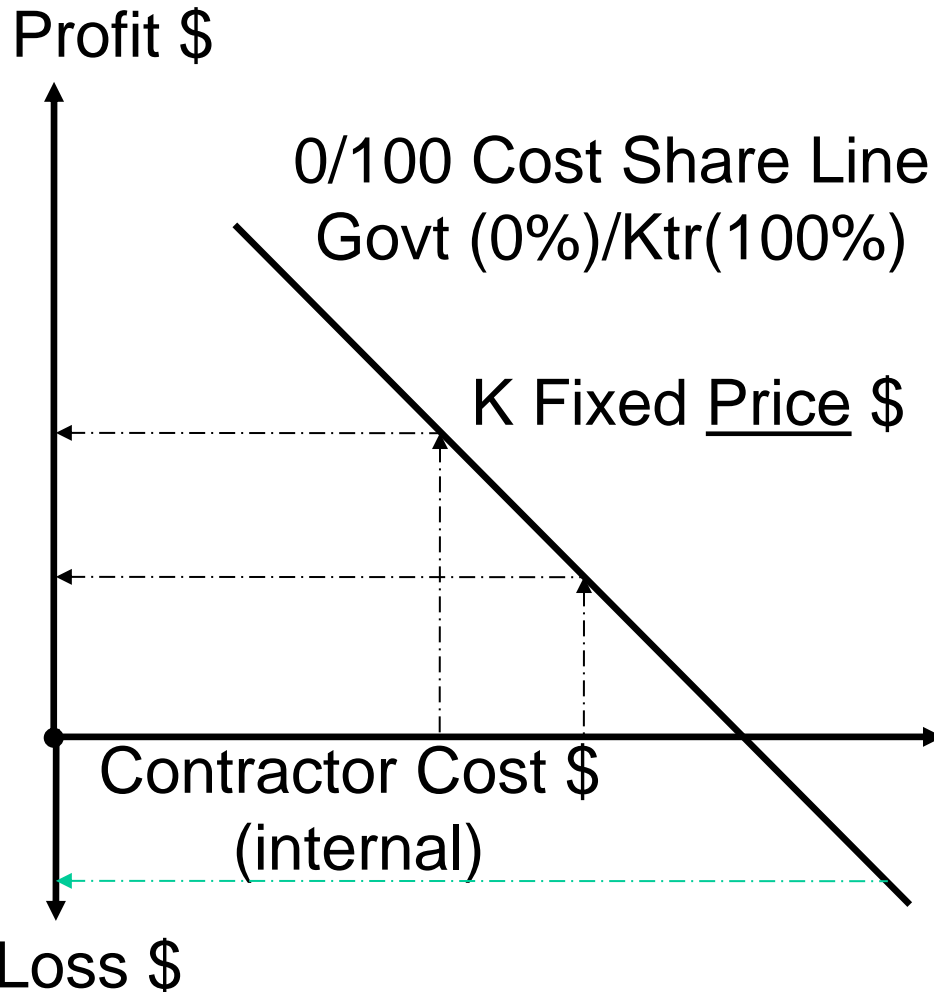
Contract Type Elements

- Contract types vary according two elements:
 - Contractor's responsibility for the costs of performance (allocate cost risk)
 - Amount & nature of profit incentive offered for specified performance (incentivize cost, schedule, and or technical performance)
- Both elements together comprise the KTR's "compensation arrangement" (CA).

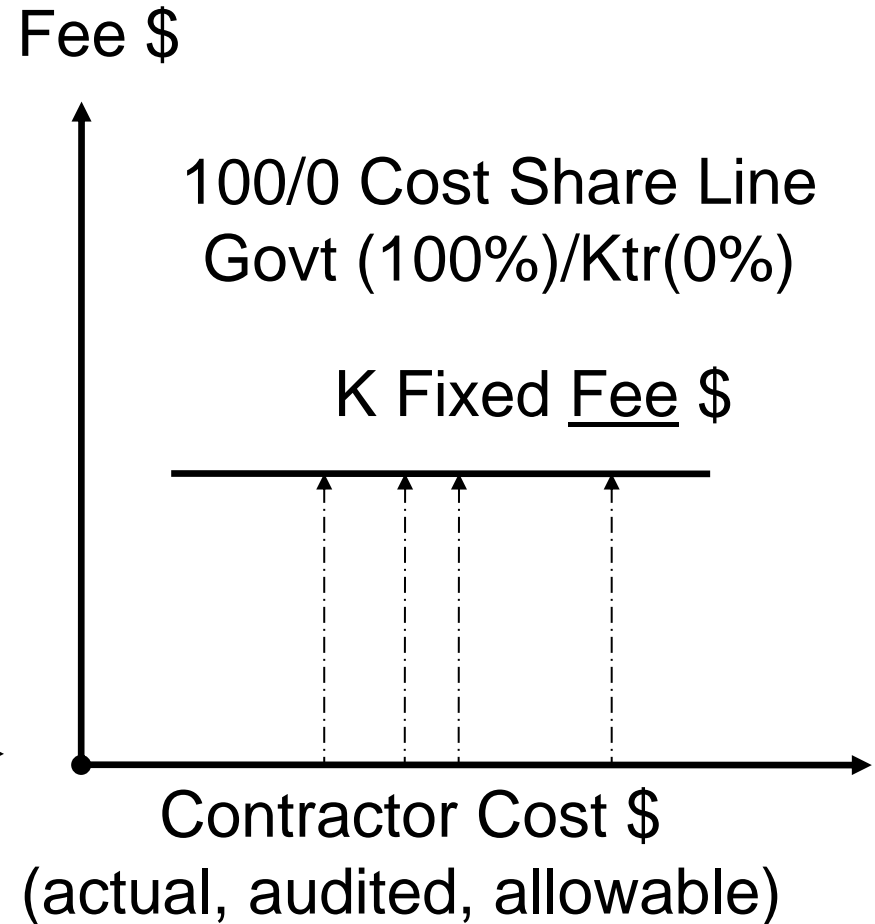
Contract Type Elements

- Compensation Arrangement
 - Contract Financing
 - Profit or Fee
 - Incentives
 - Contract Terms and Conditions

Firm Fixed Price



Cost Plus Fixed Fee



Contract Type	Gov't Cost Risk	KTR Cost Risk	Compensation Arrangement (CA)	FAR Cite
FFP	Lower	Higher	Cost: Paid from fixed price; KTR pays 100% over fixed price Profit: Remainder (if any) of fixed price after costs paid	16.202
FPIF			<i>Note: Total final price = final cost + target profit +/- % of cost underrun/overrun, to price ceiling</i> Cost: Paid from total final price; KTR pays 100% over total final price Profit: Remainder (if any) of total final price after costs paid	16.403-1 52.216-16
T&M (hybrid K type)			Cost: Labor costs paid from fixed rates; KTR pays 100% over fixed rates (FP type); materials costs reimbursed (CR type) Profit: Profit is remainder (if any) of fixed rates after labor costs paid Fee: No fee on materials costs	16.601
Cost Sharing			Cost: Gov't/KTR share costs IAW contract terms Fee: None	16.303
CPIF			Cost: Reimbursed allowable costs up to K ceiling Fee: Target fee + - % of cost underrun/overrun, to max/min fee	16.405-1 52.216-10
CPAF			Cost: Reimbursed allowable costs up to K ceiling Fee: Fixed base fee + award fee earned for performance	16.405-2
CPFF Comp			Cost: Reimbursed allowable costs up to K ceiling Fee: Fixed fee earned for end product delivery	16.306(d)(1) 52.216-8
CPFF Term	Higher	Lower	Cost: Reimbursed allowable costs up to K ceiling Fee: Fixed fee earned for hours delivery	16.306(d)(2) 52.216-8

Contract Type	Gov't Cost Risk	KTR Cost Risk	Compensation Arrangement (CA)	FAR Cite
FFP	Lower	Higher	Cost: Paid from fixed price; KTR pays 100% over fixed price Profit: Remainder (if any) of fixed price after costs paid	16.202
FPIF			<i>Note: Total final price = final cost + target profit +/- % of cost</i> Cost: Profit:	16.403-1 -16
T&M (hybrid K type)			Cost: Profit: Fee:	01
Cost Sharing			Cost: Fee:	03
CPIF			Cost: Fee:	5-1 -10
CPAF			Cost: Fee:	5-2
CPFF Comp			Cost: Fee:	d)(1) 52.216-8
CPFF Term	Higher	Lower	Cost: Reimbursed allowable costs up to K ceiling Fee: Fixed fee earned for hours delivery	16.306(d)(2) 52.216-8

Contract Type describes the KTR's Compensation Arrangement

Cost Element: How KTR costs are paid & by whom

Profit/Fee Element: How KTR earns profit/fee, if any

- In every contract type, the KTR's cost control will be affected (positively for the FP category or negatively for the CR category) by the Cost Element.
- The Profit/Fee element motivates the KTR's cost, technical and/or schedule performance in some manner.

Contract Type	Gov't Cost Risk	KTR Cost Risk	Compensation Arrangement	FAR Cite
FFP	Lower	Higher	Cost: Paid from fixed price; KTR pays 100% over fixed price Profit: Remainder (if any) of fixed price after costs paid	16.202
FPIF			Note: <i>Total final price = final cost + target profit +/- % of cost underrun/overrun, to price ceiling</i> Cost: Paid from total final price; KTR pays 100% over total final price Profit: Remainder (if any) of total final price after costs paid	16.403-1 52.216-16
T&M (hybrid K type)			Cost: Labor costs paid from fixed rates; KTR pays 100% over fixed rates (FP type); materials costs reimbursed (CR type) Profit: Profit is remainder (if any) of fixed rates after labor costs paid Fee: No fee on materials costs	16.601
Cost Sharing			Cost: Gov't/KTR share costs IAW contract terms Fee: None	
CPIF			Cost: Reimbursed allowable costs up to K ceiling Fee: Target fee + - % of cost underrun/overrun, to max/min fee	
CPAF			Cost: Reimbursed allowable costs up to K ceiling Fee: Fixed base fee + award fee earned for performance	
CPFF Comp			Cost: Reimbursed allowable costs up to K ceiling Fee: Fixed fee earned for end product delivery	52.216-8
CPFF Term	Higher	Lower	Cost: Reimbursed allowable costs up to K ceiling Fee: Fixed fee earned for hours delivery	16.306(d)(2) 52.216-8

Cost Element:

Gov't reimburses KTR's allowable costs incurred, up to ceiling (not "earned")

Fee Element:

Earned by specified performance

Contract Type	Gov't Cost Risk	KTR Cost Risk	Compensation Arrangement	FAR Cite
FFP	Lower	Higher	Cost: Paid from fixed price; KTR pays 100% over fixed price Profit: Remainder (if any) of fixed price after costs paid	16.202
FPIF	<div> Cost Element: <i>KTR pays costs from fixed price; KTR pays 100% of costs over fixed price</i> </div>		<i>Note: Total final price = final cost + target profit +/- % of cost underrun/overrun, to price ceiling</i> Cost: Paid from total final price; KTR pays 100% over total final price Profit: Remainder (if any) of total final price after costs paid	<div> Profit Element: <i>Remainder (if any) after costs paid</i> </div>
T&M (hybrid K type)			Cost: Labor costs paid from fixed rates; KTR pays 100% over fixed rates (FP type); materials costs reimbursed (CR type) Profit: Profit is remainder (if any) of fixed rates after labor costs paid Fee: No fee on materials costs	
Cost Sharing			Cost: Gov't/KTR share costs IAW contract terms Fee: None	
CPIF			Cost: Reimbursed allowable costs up to K ceiling Fee: Target fee + - % of cost underrun/overrun, to max/min fee	
CPAF			Cost: Reimbursed allowable costs up to K ceiling Fee: Fixed base fee + award fee earned for performance	16.405-2
CPFF Comp			Cost: Reimbursed allowable costs up to K ceiling Fee: Fixed fee earned for end product delivery	16.306(d)(1) 52.216-8
CPFF Term			Cost: Reimbursed allowable costs up to K ceiling Fee: Fixed fee earned for hours delivery	16.306(d)(2) 52.216-8

Contract Type Dynamics

Fixed Price

Cost Reimbursable

FFP

FPEPA

FPI

FFP LOE

CPIF



CPAF

CPFF

Ability to Define Requirement Typically Reduced

Administration Typically Increases

Risk to Government Typically Increases

COST RISK AND CONTRACT TYPE					
Cost Risk	High 				
Requirements Definition	Vague 				
Production Stages*	Solution Analysis Phase	Technology Maturation and Risk Reduction	Development	LRIP or Limited Deployment and Operational Test	Production, Deployment and Sustainment
Contract Type	Varied	CPFF	CPIF	CPIF, FPIF	FFP, FPIF, FPEPA

* Based on DODI 5000.02 (7 Jan 15), Generic Acquisition Program Structure

Factors in Selecting Contract Types

1. Degree to Which Price Competition Results in Realistic Contract Pricing
2. Degree to Which Price Analysis Provides a Reasonable Pricing Standard
3. Cost Analysis Provides Reasonable Basis for Assessing Cost in Relation to Performance Uncertainties
4. Type and complexity of the requirement
5. Combining Contract Types

Factors in Selecting Contract Types

6. Urgency of the Requirement
7. Period of Performance or Length of Production Run
8. Contractor's Technical Capability and Financial Responsibility
9. Adequacy of the Contractor's Accounting System
10. Concurrent Contracts
11. Extent and Nature of Subcontracting
12. Acquisition History

Pop Quiz

- You are negotiating a Firm-Fixed-Price (FFP) contract and would like to add a schedule incentive to incentivize early delivery. May such an incentive be added to a FFP contract?
- The Government has discovered a compound being used by terrorist cells to expand the lethality of its IED explosives. The Government has a requirement to push the bounds of current technology to enable detection of this compound using a handheld IED scanning device. The Government is asking industry to provide at least 3 prototype “state of the art” scanners within 180 days. What contract type is most appropriate?

Incentive Contracts

Incentive Contract Basics

- FAR 16.4 addresses incentive contracts and types of incentives:
 - Cost incentive (FAR 16.402-1)
 - Performance incentive (FAR 16.402-2)
 - Delivery incentive (FAR 16.402-3)
 - Multiple incentives (FAR 16.402-4)
- There are 2 major types of incentive contracts:
 - Formula Type Incentive (FAR 16.402)
 - Award Fee (FAR 16.404)

Incentive Contract Basics

➤ Incentive contracts are designed to obtain specific acquisition objectives by--

(1) Establishing reasonable and attainable targets that are clearly communicated to the contractor; and

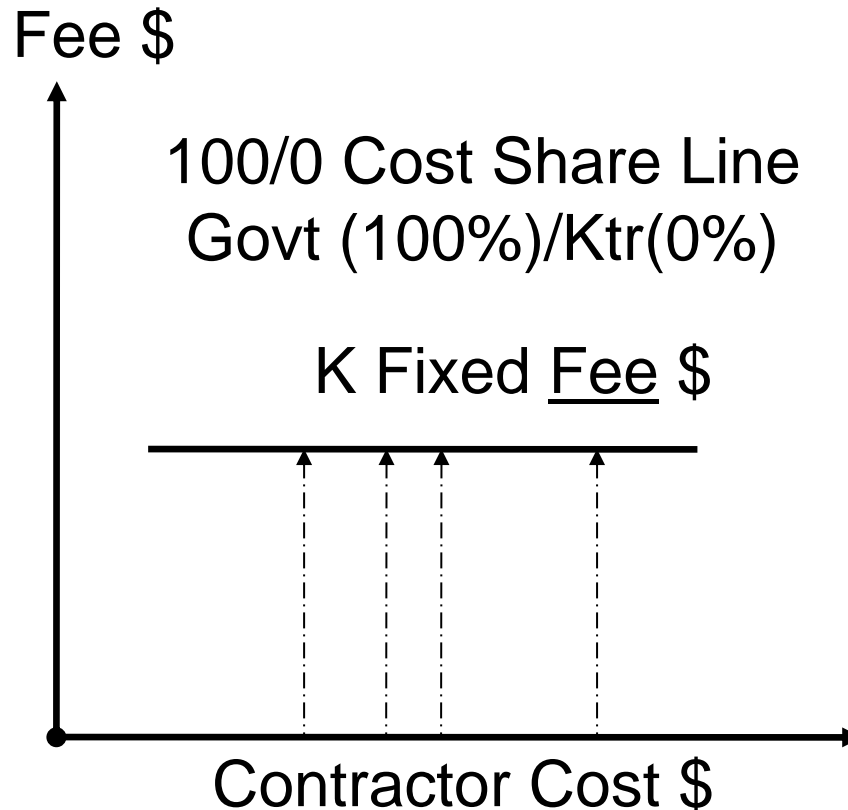
(2) Including appropriate incentive arrangements designed to --

- (i) motivate contractor efforts that might not otherwise be emphasized and
- (ii) discourage contractor inefficiency and waste.

Incentive Contract Basics

➤ FAR 16.402-1 Cost Incentives

- (a) ... No incentive contract may provide for other incentives without also providing a cost incentive (or constraint)



Dr. Carter Memo, Sep 14, 2010

- BBP Focus Area: Incentivize Productivity and Innovation in Industry
 - Principle: Increase use of Fixed Price Incentive Firm (FPIF) Contracts:
 - CPAF Contracts with subjective measures not conducive to controlling costs.
 - Incentive is important since it shares costs of overruns and reward underruns, giving both sides an incentive for good performance.
 - FPIF should be contracting officer's point of departure when appropriate.
 - FPIF appropriate for early production and single-source production where price improvement can be rewarded.



Better Buying Power

Acquisition, Technology and Logistics

[Home](#)[▼ About](#)[▼ Initiatives](#)[Library](#)[Military Services](#)[▼ Resources](#)[Contact](#)

Focus Area: Incentivize Productivity & Innovation in Industry and Government

Reward contractors for successful supply chain and indirect expense management.



Related Documents:

- ["Myth-Busting": Addressing Misconceptions to Improve Communication with Industry during the Acquisition Process](#) (Memo, 2/2/2011)
- [Use of Acquisition Program Transition Workshops](#) (Memo, 4/1/2011)
- [Myth-Busting 2--Addressing Misconceptions and Further Improving Communication During the Acquisition Process](#) (Memo, 5/7/2012)
- [Breakout 2 -- Incentivize Productivity & Innovation in Industry](#) (Video, 4/20/2011)

Initiative: Align profitability more tightly with Department goals

Initiative: Employ appropriate contract types

- The original BBP emphasized the use of Fixed Price Incentive (FPI) contracts. In BBP 2.0, we are refining our guidance to emphasize the use of the appropriate contract vehicle for the product or services being acquired. The DFAR and FAR provide for a range of contract types for a reason: one size does not fit all. This initiative will focus on improving the training of management and contracting personnel in the appropriate use of all contract types.

Contract Types Comparison

FPIF Contract (52.216-16)

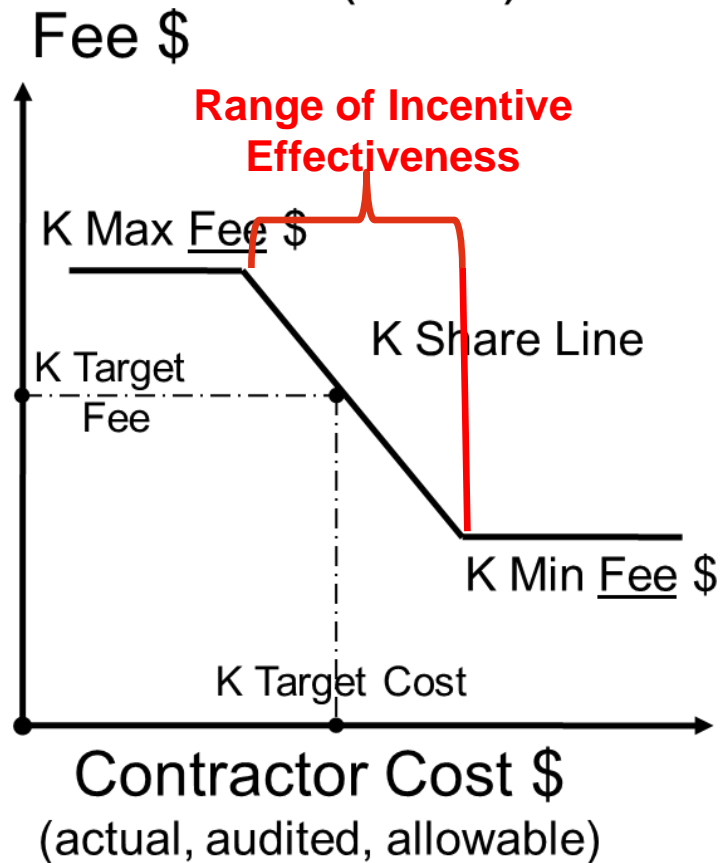
- Target Cost
- Target Profit
- Profit Adjustment Formula
- Ceiling Price

CPIF Contract (52.216-10)

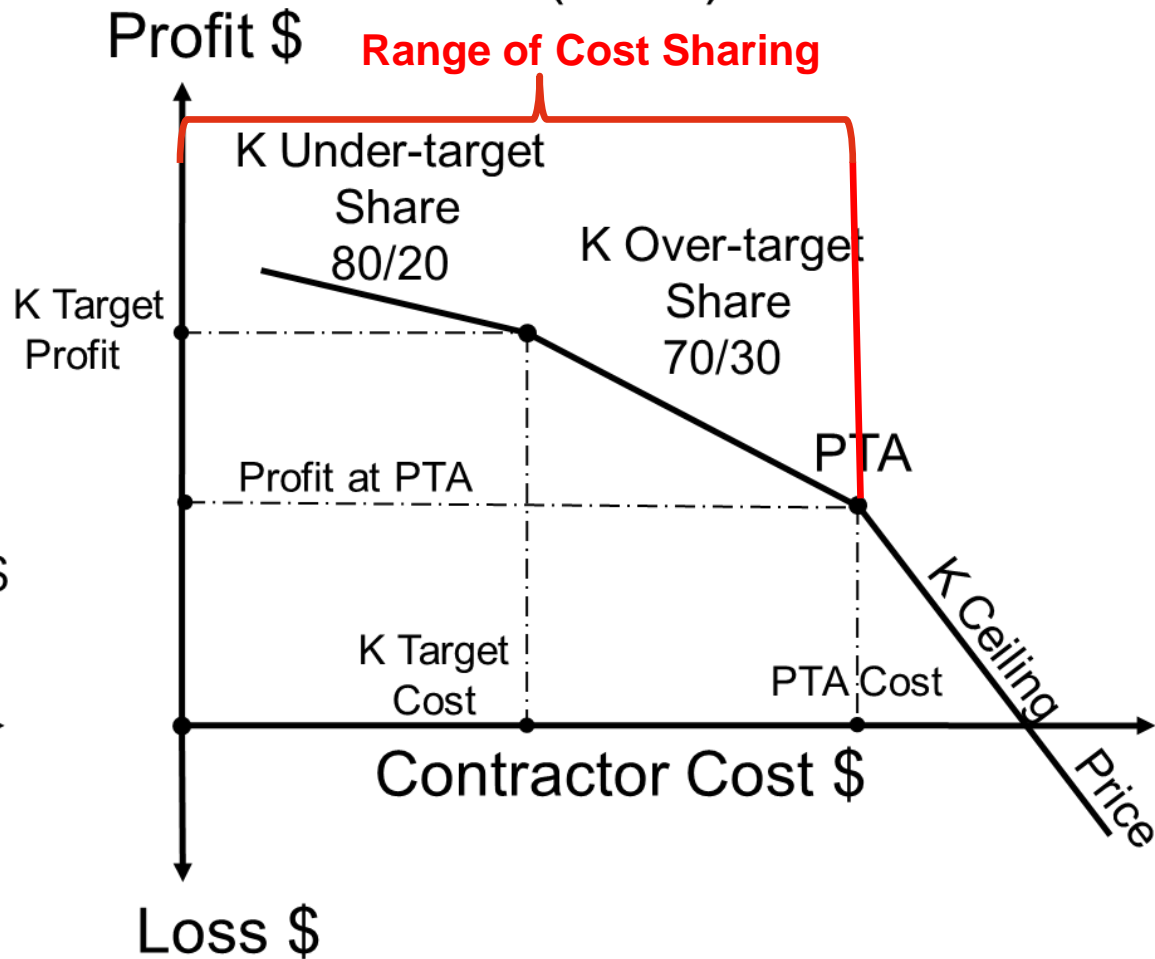
- Target Cost
- Target Fee
- Fee Adjustment Formula
- Minimum Fee
- Maximum Fee

Because profit or fee varies inversely with cost, both contract types provide a positive, calculable profit or fee incentive for contractors to control costs.

Cost Plus Incentive Fee (CPIF)



Fixed Price Incentive Firm (FPIF)



FPIF & CPIF Basics

- Share ratios for underrun and overrun may differ.
 - Steeper share ratios offer greater risk/reward potential versus flatter share ratios.
 - Quantitative analysis that considers cost risk should be used to determine share ratios for negotiation.
- FPIF is a fixed price contract, so the KTR must deliver to earn the contract price; Failure to deliver results in contract default.
- CPIF does not require delivery to receive payment; Contractor provides “best effort.”
- Under FPIF, Point of total assumption should be calculated soon after contract award; as the KTR approaches PTA it may be inclined to cut costs, etc. to reduce losses.

FPIF and CPIF Basics

- By convention, share ratios in Section B are typically expressed in ratio format with the Gov't share listed first. Ex: 80/20 means 80% Gov't/ 20% KTR share
- CPIF and FPIF (even though a fixed-price contract) both require cost data reporting.
- Prior to final price or cost determination, funds are obligated to cover the target price. (FAR 43.105)
- After the FPIF final price modification, final price typically cannot be adjusted.

Cost Plus Award Fee Contract

- Award fee can be an added incentive on any type contract
- Establish separate fee consisting of:
 - Base Fee (0 - 3%)
 - Award fee pool which contractor may earn for superior performance
- Amount of fee to be paid is a judgmental decision
 - Decision is made in accordance with criteria in award fee plan
- Fee determination is a unilateral Government decision that can be protested under the Disputes Act (See *Burnside-Ott Aviation Training Center v. Dalton*)

Cost Plus Award Fee Contracts

(Periods)

Max Fee						
Award Fee	Award Fee Pool					
	1	2	3	4	5	6
Base Fee	Base Fee 0-3%					

Estimated Cost

Cost Plus Award Fee Contracts

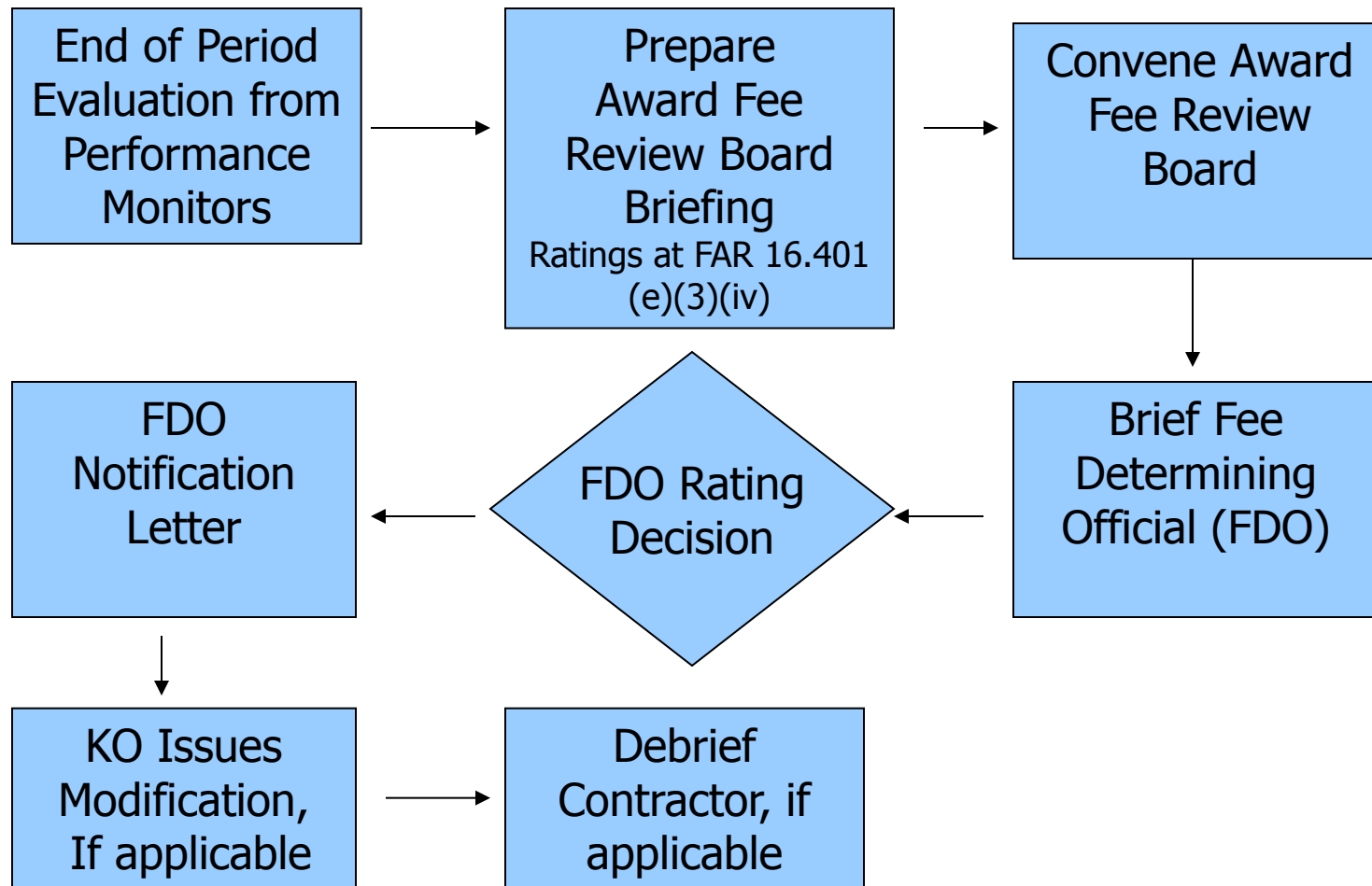
Advantages

- Flexibility
 - Can Change Criteria
- Subjective
 - Easy for non-measurable performance
- Unilateral
- PM Control

Disadvantages

- Careful Planning Required
- Administrative Burden
- Possible Tension between Parties on Award Fee
- Close scrutiny of award fee payments by OSD/Congress

Award Fee Decision Process



Multiple Incentives

Multiple Incentives – Cost, Performance & Schedule

- FAR says most incentive contracts include *only* cost incentives
- Why?
 - Because there is no ambiguity about the “value” to Government of a cost incentive.
 - The “value” is the money the Government saves.
- A cost incentive usually incentivizes delivery.
 - Generally, the sooner the contractor delivers, the lower his total cost will be.
- With only a cost incentive there is no need to worry about competing incentives

Competing Incentives

- Cost vs Performance
 - It will probably cost more to build a jet that flies at Mach 2.5 than Mach 2
- Performance vs Schedule
 - It will probably take longer to build & test a missile that will travel farther and be more accurate
- Schedule vs Cost
 - Can be competing but generally delivering early means less cost (shorter time for level of effort functions)

FAR 16.402-4(b)

Multiple Incentives - Proceed with Caution

- Use Non-cost incentives when certain they will be effective in motivating the contractor to achieve desired outcomes and the desired outcomes have real value to the Government.
 - Is there a value to the Government of early delivery?
 - If avoiding or minimizing late delivery is more important, a negative incentive (less profit/fee) for late delivery should be used.
 - What is the value to the Government of performance above the requirement?
 - Cannot incentivize anything less than the requirement

Multiple Incentives - Example

- In Satellite programs, cost is important but performance is paramount
 - We only have one chance to get it right.
- Incentive structure:

Cost	7.0% 40/60 Under 80/20 Over
Ceiling Price	120%
Performance Incentive:	
Mission Success	3.8% (13 Critical Milestones)
On Orbit Performance	4.0%
On Orbit Performance (negative)	-4.0%

Contract Type -- Keys to Success

- Use the FAR factors for selecting contract type as an analysis tool
- Don't get tricked into believing that getting a fixed price contract for risky (or constantly changing) work saves the government money
- Comprehensive cost estimating critical to determining incentive elements
- Cost reimbursement & T&M contracts place fewer cost controls on a contractor & therefore must be more closely monitored
- Selecting contract type & identifying incentives is an IPT job; don't leave it to the CO alone; think of the users requirements
- Multiple incentives are 'easier said than done'; defining incentive criteria and avoiding unintended consequences are a challenge

Contact Information

- DAU South Contracting Department
 - Professor John Cannaday:
john.cannaday@dau.mil
- Sources and Recommended Resources
 - “Incentive Contracts”, Phil McManus Presentation, 7 April 2015
 - FAR Part 16, DFARS 216 & DFARS PGI 216
 - “Guidance on Using Incentives and Other Contract Types”, DPAP Memo, date 1 April 2016
 - Continuous Learning Course “*Understanding Incentive and Other Contract Types*”
 - Continuous Learning Course “*Advanced Issues in Incentive Contracting*”

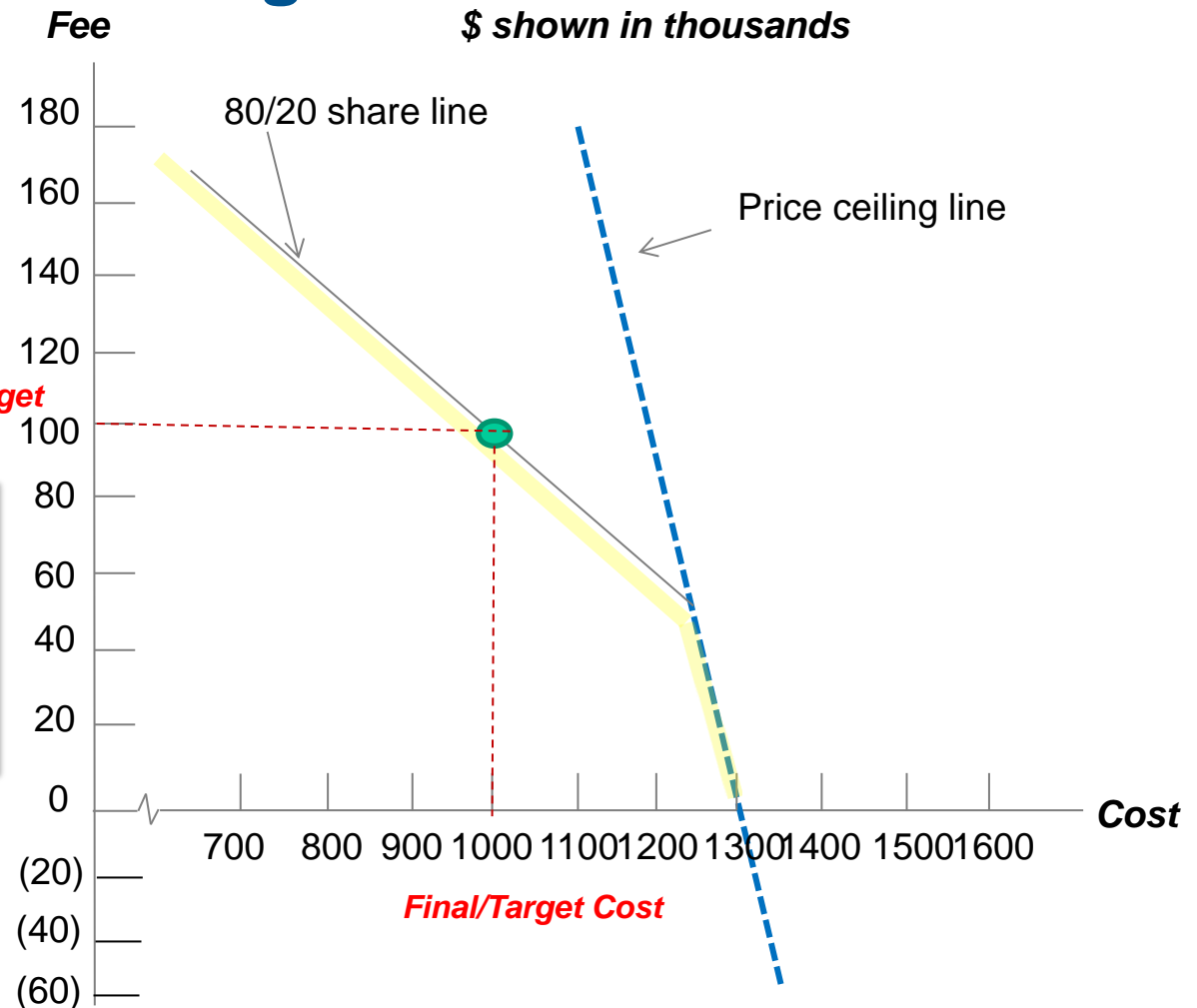
FPIF Scenario 1 - On Target

Target cost: \$1,000,000
 Target profit (10%): 100,000
 Target price: \$1,100,000

Ceiling price: \$1,300,000
 Underrun share line: 80/20
 Overrun share line: 80/20

Scenario 1

In this scenario, assume the final actual costs at contract end comes in at \$1M, which is equal to target cost. The final profit calculated is \$100,00, which is equal to the target profit.



Final price is \$1,100,000 (\$1,000,000 cost + \$100,000 profit). **38**
 Contractor earns 10% profit.

<https://acc.dau.mil/CommunityBrowser.aspx?id=462515>

FPIF with: Target Cost \$1,000,000; Target Profit \$100,000; Target Price \$1,100,000; Ceiling Price \$1,300,000. Share 80/20 Under & 80/20 Over.

Target Cost		\$ 1,000,000
Target Profit %/\$	10.00%	\$ 100,000
Target Price		\$ 1,100,000
Ceiling %/\$	130.00%	\$ 1,300,000

Assigned Shares	Govt / Ktr
Under Target	80.0% / 20.0%
Over Target	80.0% / 20.0%

Calculated Share	Cost	Profit
Optimistic	\$ 800,000	\$ 140,000
Pessimistic	\$ 1,200,000	\$ 60,000
	Govt / Ktr	
Under Target	80.0% / 20.0%	
Over Target	80.0% / 20.0%	

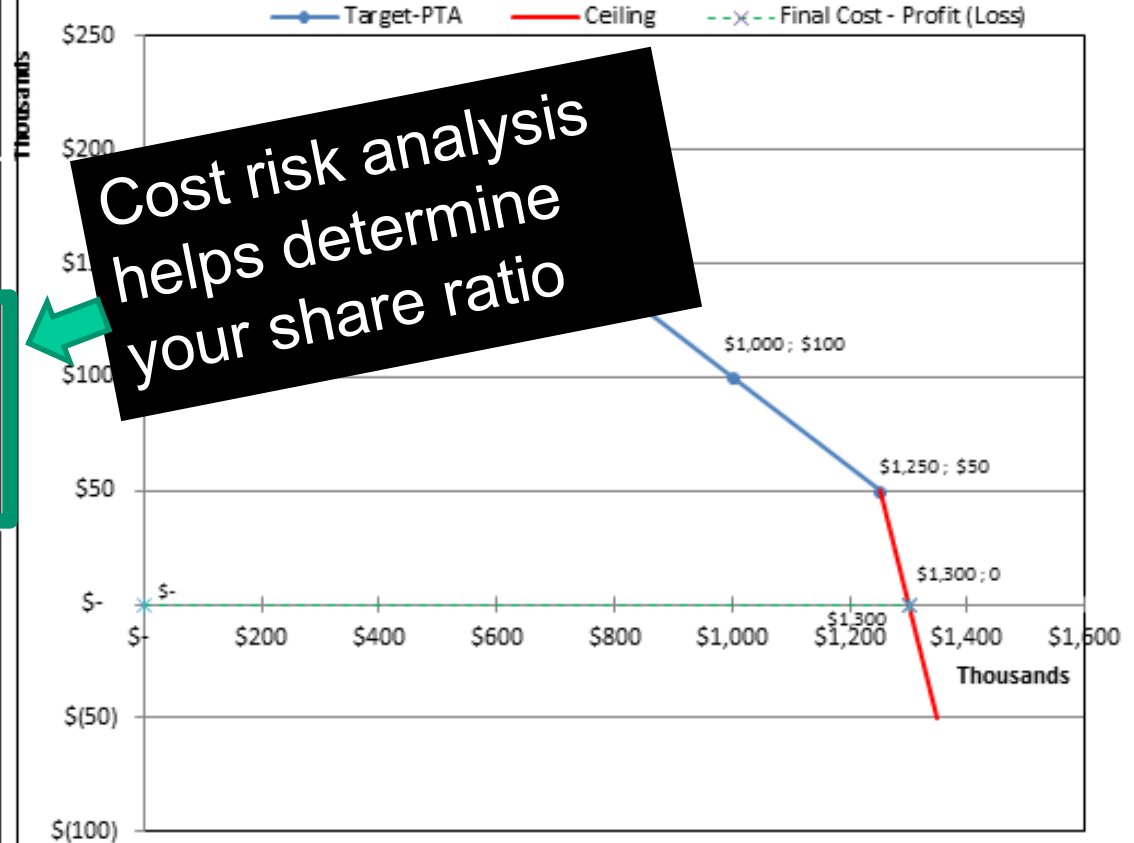
Point of Total Assumption (PTA) \$ 1,250,000

Final Actual Audited Allowable Cost: \$ 1,300,000

Final Contract Price: \$ 1,300,000

Final Contractor Profit (Loss): \$ -

Final Contractor Profit (Loss) %: 0.00%



Enter your analysis notes here.

DFARS PGI 216.403-1

Fixed-price incentive (firm target) contracts

(3) *Analyzing risk.*

(i) *Quantification of risk.*

(A) The first step is establishing a target cost for which the probability of an underrun and overrun are considered equal and therefore, the risks and rewards are shared equally, hence the 50/50 share is the point of departure. Equally important is determining that the contractor has a high probability of being able to accomplish the effort within a ceiling percentage of 120 percent. In accomplishing both these steps, the analysis of risk is essential.

(B) Too often, risk is evaluated only in general terms without attempting to quantify the risk posed by the various elements of cost. Also, a contracting officer may incorrectly fall back on the share ratios and ceiling percentages negotiated on prior contracts or other programs, without examining the specific risks.

(C) Whether being used to select the proper contract type or establishing share lines and ceiling price on an FPIF contract, the analysis of risk as it pertains to the prime contractor is key. From a contractor's perspective, all risks, including technical and schedule risk, have financial ramifications. Technical and schedule risks, if realized, generally translate into increased effort, which means increased cost. Therefore, all risk can be translated into cost risk and quantified. Risk always has two components that must be considered in the quantification: the magnitude of the impact and the probability that it will occur.

(D) When cost risk is quantified, it is much easier to establish a reasonable ceiling percentage. The ceiling percentage is applicable to the target cost on the prime contract. It is important to understand the degree of risk that various cost elements pose in relation to that target cost. A discussion of the major cost elements and the risk implications follows in paragraphs (3)(ii) through (iv) of this section.